

Computing & Information Technology

What is CMIT? CMIT is a major that provides foundations in computer science and tools of computer programming, information technology, and general computing technology in order to provide a technical foundation, which provides students with practical skills to negotiate the continually changing structure of information technology. Besides taking CMIT for computing's sake, students can apply learned skills to any area of interest (art, music, chemistry, math, web systems, physics, just to name a few) in order to understand how technology can enhance those disciplines.

For example, imagine that you have a desire to express yourself artistically. You could take courses in digital graphics design and/or computer graphics and animation, providing you with the theory and skill set that would aid you in creating virtual landscapes, moving imagery, and prepare you for further exploration into alternative digital medias. If you are more of a person that likes getting their hands dirty, the hardware and technology focus of CMIT will teach you about how computers work and communicate, you can take hands on courses in computer hardware, operating systems, and computer networking. Mix that up with data security and information assurance and you will have real world skills in designing, constructing, managing, and defending computer networks for yourself or future employers. Finally, if you want to learn how to control computers and make them perform services or useful tasks for you, your employer, or others, the software engineering focus will take you through three courses: introduction to programming, advanced programming, and data structures. Once you are competent in the computer science and programming foundations, you will take software engineer, which will prepare you for large scale software development.

The CMIT program at Guilford is a very dynamic experience for both the faculty and the students that are part of it. Together with their professor, students actively learn theory and application of that theory in order to solve real world problems both in and out of the classroom. Many of the courses are taught in lab settings where you will have the opportunity to hear, see, and apply course concepts as they are being taught. You will learn value skills using state of the art technologies that will aid you in your CMIT studies, other areas of interest, as well as preparing you for real world opportunities. If you desire, double major or minor in another discipline and you can combine your work in CMIT with another area of interest! CMIT majors have concentrated and/or double-majored in areas as diverse as Philosophy, Physics, Math, History, Art, Political Science and German Studies. Guilford's CMIT program is constructed to allow you to build connections between technology and the other fields you're interested in!

So what do CMIT graduates do after they leave Guilford? The knowledge and skills that are learned from CMIT have allowed students of our department to attain graduate degrees, work for large and small corporations as technology, information, or networking specialists, as well as utilize the skills they learned in CMIT to aid them in other endeavors.

Why Guilford College?

Consistently rated nationally by *The Princeton Review* as well as being one of the 40 colleges in *Colleges that Change Lives* by Loren Pope, Guilford College inspires each student to achieve excellence through an engaging community, rooted in Quaker values, which nurtures creativity and social responsibility.

What can a Guilford education offer you?

- An urban setting near other colleges & universities with an area student population of over 27,000 students.
- A consortium agreement with University of North Carolina at Greensboro, Greensboro College, Bennett College, North Carolina A&T State University, Elon University, and High Point University provides students with access to courses free of charge.
- A college mission statement & core values based on, and consistent with, Quaker testimonies. Guilford's core values are: Community, Diversity, Equality, Excellence, Integrity, Justice & Stewardship.
- A challenging academic program, which emphasizes not only academic tracks and the learning process, but also the interconnection between curricular and co-curricular pursuits.
- A diverse student population provides a stimulating peer environment.
- Excellent study abroad programs in China, England, France, Germany, Ghana, Ireland, Italy, Japan, Netherlands, Scotland, Spain, and Wales

The academic program in Computing and Information Technology

The Bachelor of Science degree is offered in Computing and Information Technology.

A minor is offered in Computing and Information Technology.

The requirements for the Computing and Information Technology major consist of at least nine courses (36 credit hours) with the following specific requirements.

Foundation Computer Science Courses (12 credits)

- CMIT 140: Introduction to Computer Programming
- CMIT 141: Advanced Programming
- CMIT 221: Foundations in Information Systems

Focus in either Software Engineering or Information Technology (8 credits)

Software Engineering Focus

- CMIT 201: Data Structures
- CMIT 340: Software Engineering

Information Technology Focus

- CMIT 321: Operating Systems
- CMIT 322: (Inter)networking Computers

Electives (12 credits)

Students may choose electives from the following list. At least eight (8) of the credits must be at the 300 level or above. Students should consult with their adviser to choose a set of electives that provide a course of study to meet their interests and needs.

- Any CMIT course numbered 200 or above
- ART 245: Digital Darkroom
- BUS 241: Computers and Management
- BUS 341: Management Information Systems
- BUS/CMIT 342: Database Systems
- BUS 344: E-Commerce
- GEOL 340: Images of the Earth
- MATH 212: Discrete Mathematics I
- MATH/PHYS 320: Mathematical Physics
- MATH 325: Linear Algebra
- MATH 412: Discrete Mathematics II
- PHIL 241: Computer Ethics
- PHIL 292: Formal Logic
- PHIL 375: Topics in the Philosophy of Mind
- THEA 371/CMIT 371: Digital Graphic Design

Internships and independent study courses may be used as elective credits for the computing and information technology courses with prior approval from the coordinator of the major.

Capstone (4 credits)

Students must complete one of the following.

- CMIT 401/IDS 419: Artificial Intelligence and Artificial Life
- A senior project (CMIT 460, 4 credits) that demonstrates a synthesis of previous coursework for the major and that has a significant portion devoted to social, ethical, political, and/or philosophical aspects of computing.

Students who wish to pursue more advanced work in computing or computer science are encouraged to develop a strong background in mathematics with a concentration in Mathematics for the Sciences being especially appropriate. Courses in discrete mathematics and formal logic are particularly encouraged.

Employment Opportunities

Guilford College alumni holding a Computing & Information Technology degree hold a diverse set of positions with many different types of employers. Position titles often include:

- Database Analyst
- Database Administrator
- Systems Administrator
- Applications Programmer
- IT Specialist
- Web Designer
- IT Consultant
- Software Engineer

Where do graduates go?

In addition to opportunities in industry, Guilford CMIT graduates also pursue advanced degrees in Computer Science, Information Technology Management, Bio-Informatics, and other related technology fields.

Faculty

Christopher Johnson, Assistant Professor; cjohnso6@guilford.edu

Robert M. Whitnell, Associate Professor of Chemistry

For additional information about CMIT at Guilford College visit www.guilford.edu/cmit

